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Device for Preventing and Extinguishing Fires

C L A I M S

1. Device for preventing and extinguishing fires in a closed spatial area or in closed sections of a divisible spatial area (1) (referred to in the following as "target area"), having a buffer reservoir (2) in which oxygen-displacing gas (3) is stored under high pressure, a supply line system (4) which connects at least one extinguishing nozzle (5) with said buffer reservoir (2) by means of a pressure reducing valve (6), and a controller (7) for controlling the pressure reducing valve (6) in order to introduce the oxygen-displacing gas (3) into the target area (1) gradually as needed, or instantly in the event of fire, wherein one or more inert-rendered levels of reduced oxygen content in comparison to the natural state can be set in target area (1),
c h a r a c t e r i z e d i n t h a t
buffer reservoir (2) is configured as a high-pressure pipe (8) having a compressive strength of ≥ 200 bar and that high-pressure pipe (8) has a connection (13) to the supply line system (4) at least at one head end section (12).
2. Device in accordance with claim 1,
c h a r a c t e r i z e d i n t h a t
high-pressure pipe (8) consists of a fiber-reinforced composite.

3. Device in accordance with claim 2,
characterized in that
high-pressure pipe (8) has a pressure capacity of 300 to 700 bar.
4. Device in accordance with one of claims 1-3,
characterized in that
buffer reservoir (2) and supply line system (4) are arranged as a compact
module either in target area (1) itself or directly adjacent target area (1).
5. Device in accordance with one of the preceding claims,
characterized in that
buffer reservoir (2) further comprises at least one mechanism (9) for filling
or refilling said buffer reservoir (2) with oxygen-displacing gas (3).
6. Device in accordance with claim 5,
characterized in that
a gas generator (10) is provided to build up the oxygen-displacing gas (3)
stored in buffer reservoir (2) which is connected to buffer reservoir (2) by
means of mechanism (9).
7. Device in accordance with one of the preceding claims,
characterized in that
controller (7) is further provided with an oxygen sensor (11) to measure the
oxygen content in target area (1) and regulate the amount of extinguishing
agent to be fed into target area (1).
8. Device in accordance with one of the preceding claims,
characterized in that
controller (7) is further provided with a fire detection device, in particular an
aspirative fire detection device.

9. Device in accordance with one of the preceding claims,
characterized in that
the oxygen-displacing gas (3) is a pure inert gas or a mixture of inert gases.
10. Use of a device in accordance with one or more of claims 1-9 in a tunnel.